FOS L4 Release Changes (use this table for the pending table)

L4	RBR key	L4_rel	text	clarification
F-ANA-01030	1559	B	The FOS shall allow the user to access a previously saved dataset for analysis.	A dataset is defined to be user specified data from a contiguous period of time from a single spacecraft. The dataset will have a standardized format which is described in the FOS Design Specification and FOS Database Design and Database Schema Specifications Document.
F-ANA-02010	1563	A	The FOS, by default, shall determine the appropriate data base to use for processing each request for data analysis.	
F-ANA-03015	5055	A	The time span for the analysis shall be one second or greater.	
F-ANA-03040	1571	A	The FOS shall provide notification for every telemetry mnemonic requested for analysis which is not valid for the time interval requested.	
F-ANA-03050	5056	A	The FOS shall perform analysis on all requested telemetry parameters which have at least one sampling within the specified time interval.	Types of analysis allowable in an analysis request are defined in section 9.1.9.1.
F-ANA-03060	5059	A	If a telemetry parameter requested for analysis does not occur within the requested time span, all reports and plots containing a reference to the parameter shall indicate that the parameter was not found.	
F-ANA-03120	5061	A	The FOS shall provide the capability process a request for telemetry MMM data at orbit night resolution for any time span greater than or equal to one orbit and up to the lifetime of the mission.	
F-ANA-03125	5080	B	The FOS shall provide the capability process a request for telemetry MMM data at orbit day resolution for any time span greater than or equal to one orbit and up to the lifetime of the mission.	

F-ANA-03140	1581	B	The FOS shall check for the existence of all specified mnemonics whenever a new telemetry data base, (start of the request or data base crossover), is encountered during the processing of the data analysis request.	A data base crossover is the point in time whan a new version of the data base replaces the current version and is now considered the operational data base. The time at which this occurs is maintained in the system thus allowing the appropriate data base to be utilized when analyzing historical data.
F-ANA-03150	1582	B	The FOS shall log a message to the history log if a specified mnemonic is no longer valid after a data base crossover.	
F-ANA-03170	1584	B	The FOS shall provide notification if a specified mnemonic no longer has a data base defined EU conversion after a data base crossover.	
F-ANA-04020	5335	B	The FOS shall be able to generate datasets from the following S/C telemetry: a. Stored real-time housekeeping telemetry data b. S/C recorder housekeeping data c. Engineering data	S/C data is stored in a merged archive of real-time and recorder data. Since this merged archive contains both types, the datasets generated may also contain both, depending on the time span of the dataset.
F-ANA-04025	5086	A	The FOS shall be able to generate datasets from statistical data.	

F-ANA-04030	1587	B	The FOS shall be able to generate datasets from the following FDF data: a. Star Density profile b. Star Interference c. Earth Sensor Assembly (ESA) Sun/Moon Interference d. Fine Sun Sensor (FSS) Visibility Prediction e. TDRSS State Vectors f. TDRSS Availability Times g. Filter Tuning Parameters h. Omni to TDRSS Viewing Times i. HGA to TDRSS Viewing Times j. Omni to Ground Station Viewing Times k. HGA Gimbal Angles l. Predicted Ephemeris m. Mass and Center of Mass Location Estimates n. Oscillator Frequency data o. EOS Brouwer-Lyddane Elements	
F-ANA-04040	1588	A	The FOS shall provide the capability to generate datasets from data base defined derived parameters.	
F-ANA-04050	1589	B	The FOS shall provide the capability to generate a dataset from the results of a user supplied algorithm. See section 8.6 for a description of user supplied algorithms.	
F-ANA-04080	1592	A	The FOS shall provide the requested EU and/or raw value for each occurrence of each specified telemetry mnemonic in the dataset.	
F-ANA-04090	1593	A	The FOS shall provide the spacecraft time for each telemetry mnemonic in the dataset.	
F-ANA-04100	1594	A	The FOS shall provide the capability to generate datasets based on spacecraft start and stop times as specified in the request.	

F-ANA-04110	5064	A	The FOS shall provide the capability to generate datasets which contain telemetry values based on user specified sampling rate specified per parameter.	
F-ANA-04120	1596	B	The FOS shall provide the capability to generate datasets in the carryout format as specified in the FOS Design Specification and FOS Database Design and Database Schema Specifications Document.	
F-ANA-04310	5065	A	The FOS shall provide the capability to build ASCII reports from the system generated telemetry MMM statistics data.	
F-ANA-04375	5336	B	Each Time Ordered Downlink Report shall contain the following header information: a. The date and time of the report b. The starting spacecraft time of the data c. The ending spacecraft time of the data	
F-ANA-04380	5069	B	The FOS shall provide all data base defined telemetry mnemonics and their respective values for the time interval requested in the Time Ordered Downlink Report. If a telemetry mnemonic has a data base defined EU conversion, the EU value will be supplied, otherwise the raw value will be supplied.	This includes both analog and discrete parameters.
F-ANA-04390	5070	B	The FOS shall provide the spacecraft time for each telemetry mnemonic listed in the Time Ordered Downlink Report.	
F-ANA-04410	1611	B	The FOS shall provide the capability to generate a Parameter Out-of-limits Report for a user specified mission.	A parameter Out-of-limits Report is a report which provides information, on a parameter by parameter basis, regarding limit violations and durations.

F-ANA-04415	5089	B	Each of the out of limits report shall contain the following header information: a. The date and time of the report b. The starting spacecraft time of the data c. The ending spacecraft time of the data d. A list of parameters which are out of limits at the start time of the report	
F-ANA-04420	5337	B	The FOS shall provide for each parameter specified in a request for a Parameter Out-of-limits Report, the following information: a. Spacecraft time for start of every limit violation b. Duration of every limit violation which began within the time span of the report. c. Sum of durations of all limit violations within the duration of the report. d. The type of the limit violation. Violations covered are red-high, red-low, yellow-high, yellow-low, and rail.	
F-ANA-04430	1613	B	The FOS shall generate the Parameter Out-of-limits Report for the time interval specified.	
F-ANA-05120	1625	A	The FOS shall compute the total number of state changes for each discrete telemetry parameter for the life of the mission.	
F-ANA-05130	1626	A	The FOS shall compute the total elapsed time spent in each state for each discrete telemetry parameter on a daily basis.	
F-ANA-05140	1627	A	The FOS shall compute the total elapsed time spent in each state for each discrete telemetry parameter on a monthly basis.	

F-ANA-05150	1628	A	The FOS shall compute the total elapsed time spent in each state for each discrete telemetry parameter for the life of the mission.	
F-ANA-05160	1629	B	The FOS shall generate and store statistics for the following FDF supplied data: a. EOS Brouwer-Lyddane Elements b. Oscillator Frequency Report c. Mass and Center of Mass Location Estimates	
F-ANA-05170	1630	B	The FOS shall compute the following statistics for the FDF supplied data: a. Minimum value b. Time for the minimum value c. Maximum value d. Time for the maximum value e. Mean f. Standard Deviation g. Number of samples	
F-ANA-05180	1631	B	The FOS shall compute statistics for the FDF data upon receipt of the data.	
F-ANA-05190	1632	B	The FOS shall compute statistics for the FDF data for the mission to-date.	
F-ANA-07050	1647	B	The FOS shall generate an event message when a limit violation will occur within the specified time criteria.	
F-ANA-07300	5099	B	The EOC shall provide the capability to generate a clock correlation report for each real-time pass during which clock correlation is performed.	
F-ANA-08020	1665	A	The FOS shall provide the capability to maintain a queue of up to 10 requests for data analysis.	
F-ANA-08040	1667	A	The FOS shall provide the capability to estimate the percentage complete of a data analysis request.	

F-ANA-08060	1669	B	The FOS shall provide the capability to selectively decommutate only those parameters which are required to fulfill the analysis request.	
F-ANA-08070	5105	B	The FOS shall provide the capability to process a routine request for analysis at 12 time the real time telemetry rate.	A routine request for analysis is defined to be a request for telemetry and statistics from telemetry for up to 1500 mnemonics. This performance requirement applies to the time period starting when telemetry data begins flowing to the analysis request processor, and ending when the resulting dataset is passed on the User Interface for display. This requirement applies only to requests which do not require telemetry which is stored at a location other than the local EOC telemetry archive.
F-ANA-09120	5117	B	The EOC shall generate the associated command request (if defined) when an EASE evaluation result is TRUE.	
F-ANA-09130	5118	B	The EOC shall provide the capability to associate a real time procedure with an EASE.	
F-ANA-09140	5119	B	The EOC shall initiate the associated real time procedure (if defined) when an EASE evaluation result is TRUE.	
F-CMD-01160	1498	A	The EOC shall be capable of transmitting commands to EDOS via Ecom.	
F-CMD-01310	1502	A	The EOC shall permit an authorized EOC operator to issue individual commands, in real time.	
F-CMD-01315	1503	A	The EOC shall be capable of transmitting commands from a command procedure consisting of one or more commands.	
F-CMD-01317	1504	A	The EOC shall be capable of transmitting commands from a ground script.	
F-CMD-01320	1505	A	The EOC shall merge spacecraft and instrument commands, and spacecraft and instrument memory loads into one uplink stream.	An active load must be killed before operator commands will be accepted.
F-CMD-01330	1507	B	The EOC shall be capable of transmitting predefined Relative Time Sequence (RTS) loads.	
F-CMD-01340	1509	B	The EOC shall be capable of transmitting table loads.	The table loads may be for either the spacecraft, or an instrument.

F-CMD-01345	1510	B	The EOC shall be capable of transmitting instrument microprocessor loads.	
F-CMD-02110	1511	A	The EOC shall assemble standard, fixed length packets from the command structures formatted for on board execution.	This packet format is specified in CCSDS 202.0-B-2, Telecommand Part 2 Data Routing Service, of November, 1992.
F-CMD-02120	1512	A	The EOC shall encase packets within a command link transmission unit (CLTU).	This is specified in CCSDS 202.0-B-2, Telecommand Part 2 Data Routing Service, of November 1991.
F-CMD-02125	1513	A	The EOC shall monitor command link control words (CLCWs) from the spacecraft to ascertain status of the command link.	This is specified in CCSDS 202.0-B-1, Telecommand Part 2.1 Command Operation Procedures, of October 1991.
F-CMD-02210	1515	A	The EOC shall validate all real time commands and ensure that the commands accepted conform to the command definition.	These commands may be issued from either a ground script, a procedure, or as operator input.
F-CMD-02220	1517	A	The EOC shall assign default values, if available, to command data portions if not specified by the user.	
F-CMD-02225	1518	A	The EOC shall provide the capability to assemble commands with submnemonic specifications.	Commands with submnemonic specifications are also known as serial magnitude, nondiscrete, or analog commands in other control centers.
F-CMD-02230	1519	A	The EOC shall use a predefined default value for a submnemonic when one is not explicitly provided.	
F-CMD-02235	1520	A	The EOC shall require submnemonic values for commands having submnemonic specifications, but lacking default values.	Such a command will be rejected if the command is issued without specifying a value for the submnemonic.
F-CMD-03110	4982	B	The EOC shall provide the capability to verify up to four (4) telemetry points prior to command transmission.	The database will specify which commands are to be prerequisite checked, and will provide for specification of a single range of acceptable discrete or analog values for each telemetry point. While prerequisite state checking cannot be performed on commands within a stored command load, the CMS/Planning and Scheduling subsystems do command constraint check analysis as part of the stored command building process.
F-CMD-03125	1524	B	The EOC shall suppress transmission of commands which fail prerequisite checking.	

F-CMD-03127	4983	A	The EOC shall allow the operator to override a command prerequisite state check failure.	Upon prerequisite state check failure, the operator will be prompted for override permission. If the operator's response indicates override, processing of the command will continue as though prerequisite check override had been enabled at the time the command was issued.
F-CMD-03135	1527	B	The FOS shall report to the user the mnemonic, required values, current values, and current state which cause a prerequisite check to fail.	
F-CMD-03210	1528	B	The EOC shall determine a specific command as critical based on a its definition.	This definition is contained within the data base.
F-CMD-03215	1529	B	The EOC shall require a user authorization (allow or cancel) prior to uplinking a critical command, regardless of its origin (operator input, command procedure, or ground script).	
F-CMD-03310	1532	B	The EOC shall verify existence of the load upon receipt of a load uplink request.	
F-CMD-03315	1533	B	The EOC shall check load data by verifying pertinent load parameters to ensure proper load identification.	Pertinent load parameters include spacecraft id, date/time window and destination.
F-CMD-03320	1534	B	The FOS shall notify the user of load validation failures.	
F-CMD-04110	1537	B	The EOC shall process and output to ECOM a single real-time emergency command request within 500 milliseconds of receiving the request from an EOC operator.	
F-CMD-04215	1541	B	The EOC shall implement retransmission such that all commands transmitted since the last command known to be received and accepted at the spacecraft shall be retransmitted in the same order as originally transmitted.	

F-CMD-04220	1542	B	The EOC shall provide a predefined, operator overridable retransmission count to limit the number of retransmissions attempted.	
F-CMD-04225	1543	B	The EOC shall permit the operator to disable command retransmission.	Specifying a retransmission count value of zero effectively disables retransmission.
F-CMD-04230	1544	B	The EOC shall provide the capability to set the next expected ground frame sequence number to a user specified value.	This capability is provided to permit resynchronization of the ground and spacecraft frame sequence numbers. It is permitted only when command transmission is not in progress.
F-CMD-05245	5049	B	The EOC shall allow a pre-defined duration time after receipt verification before determining that a command has failed telemetry verification.	The pre-determined time is defined per command, and is based upon onboard execution time; transmission time is not taken into account. This is because the verification wait period does not begin (in real time) until after the CLCW has been received; the transmission delay period for the CLCW is identical to that for the telemetry, and this accounts for the transmission delay.
F-CMD-05247	5051	B	The EOC shall check telemetry values for all outstanding commands needing telemetry verification at intervals of no more than a pre-defined number of seconds.	This gives the EOC the capability to determine that a command is telemetry verified, prior to the pre-defined duration time. The pre-defined duration is specified in the database. For example, if the duration time for a particular command is one minute and the interval time is specified as five seconds, the command could be telemetry verified in as little as five seconds after uplink verification. This same command, however, would not be considered to have failed telemetry verification unless the one minute duration lapses without the command being telemetry verified.
F-CMD-05310	1554	B	The EOC shall provide the IP-ICC with a final instrument uplink status, with a failure status to indicate the point of failure.	The following are examples of possible status: _- rejected by EOC _- transmitted, not received by spacecraft _- received by spacecraft; unsuccessfully executed _ (or) _- dispatched to instrument; unsuccessfully executed _- successfully executed
F-CMD-05410	1555	B	The EOC shall provide an IP-ICC with instrument command notification messages, when emergency or contingency instrument commands are issued by other than the IP-ICC.	For example, by the EOC.

F-CMD-11212	2254	A	The EOC shall uplink at a rate of 1 kilobits per second (kbps) when the control center is configured for transmission utilizing SN SMA service and the AM1 High Gain antenna.	
F-CMD-11215	2255	A	The EOC shall uplink at a rate of 2 kbps when the EOC is configured for transmission utilizing the GN service and the AM1 Omni antenna.	
F-CMD-11220	2256	A	The EOC shall uplink at a rate of 2 kbps when the EOC is configured for transmission utilizing the DSN service and the AM1 Omni antenna.	
F-CMD-11225	2257	A	The EOC shall uplink at a rate of 2 kbps when the EOC is configured for transmission utilizing the WOTS service and the AM1 Omni antenna.	
F-CMD-12240	2259	A	The EOC shall accept user supplied binary (hex) formatted commands.	Other than the critical prompt, neither validation nor verification is provided for commands entered in binary format.
F-CMD-14315	2263	A	The EOC shall provide the user with the capability to select either of the two CTIUs as the active CTIU.	
F-CMD-15245	5050	B	The EOC shall allow a pre-defined duration time of up to one minute after receipt verification before determining that a command has failed telemetry verification.	The pre-determined time is defined per command, and is based upon onboard execution time; transmission time is not taken into account. This is because the verification wait period does not begin (in real time) until after the CLCW has been received; the transmission delay period for the CLCW is identical to that for the telemetry, and this accounts for the transmission delay.
F-CMD-15515	2264	B	The EOC shall provide the capability to verify via telemetry the successful dispatch of absolute time stored commands.	
F-CMD-15520	2265	B	The EOC shall provide the capability to verify via telemetry the successful dispatch of relative time stored commands.	

F-CMS-00250	5345	B	The EOC shall provide the capability to include in the ATC load report: a. the load name b. Load type c. Valid uplink period d. Uplink date and time e. Load size in bytes f. Starting and ending ATC buffer locations g. Execution times of the first and last commands h. Number of commands i. Number of critical commands j. List of control commands k. A listing of all absolute time commands in the load, including for each command: 1. the command's memory location 2. execution time 3. command mnemonic 4. submnemonics and their values, if applicable 5. command bit pattern 6. criticality indicator	
F-CMS-00305	1212	A	The EOC shall determine an uplink window for each ATC load.	The EOC will schedule the uplink of the load for a real-time contact that falls within the uplink window. Requirements for scheduling of load uplinks and for accepting user modifications of the uplink window are in the Planning & Scheduline (PAS).
F-CMS-00610	1218	B	The EOC shall expand ground activities in the DAS into lists of time tagged ground directives.	The EOC will expand ground activities using expansion instructions defined in the PDB.
F-CMS-00615	1219	B	The EOC shall provide the capability to modify the expansion of a ground activity into ground directives by applying parameter values supplied as part of an activity request.	Activity expansion instructions in the PDB will include information on the applicability of parameter values.
F-CMS-00640	5033	A	For each stored command that is scheduled to execute, the EOC shall provide a comment in the ground script which specifies the command and is time tagged with the same time as the stored command.	This comment is included in the ground script for optional display to the FOT at the time of stored command execution, and for optional telemetry verification of the execution of the stored command.

F-CMS-00670	1228	A	The EOC shall provide the capability to generate a ground script from a list of ground directives that covers the same operational period as the DAS.	The operational period (also called a target day) for a DAS will be specified by the planner/scheduler. The nominal operational period for a DAS is 24 hours. Appropriate boundaries for the ground script will be determined so that the ground script will approximately cover the same operational period as the DAS.
F-CMS-00910	5022	B	The EOC shall maintain a catalog of RTS loads existing in the EOC.	The RTS catalog is a list of RTS loads that are available for uplink. The RTS catalog will be used when the scheduling of an RTS load uplink is requested via Planning & Scheduling.
F-CMS-01210	5346	B	The EOC shall maintain a catalog of table loads existing in the EOC.	The table catalog is a list of table loads that are ready for uplink. The table catalog will be used when the scheduling of a table load uplink is requested via Planning & Scheduling.
F-CMS-01505	5348	B	The EOC shall provide the capability to produce an integrated report which includes the following information in chronological order: a. Absolute time commands to be executed b. Relative time commands to be executed c. Scheduled spacecraft contacts d. Real-time commands to be uplinked e. Loads to be uplinked f. Expected orbital events	The Integrated Report will be made available to the IOT via the IST.

F-CMS-01610	1289	B	The EOC shall process all loads associated with a DAS in less than 1 hour. The processing of loads associated with a DAS shall include: a. Generating an ATC load based on the expanded DAS activities b. Verifying the current contents of RTS buffers referenced by the ATC load. c. Generating a ground script based on the expanded DAS activities d. Verifying the existence in the EOC table load catalog of the table loads that have uplink references in the DAS e. Verifying the existence in the EOC flight software load catalog of the flight software loads that have uplink references in the DAS f. Verifying the existence in the EOC microprocessor load catalog of the microprocessor loads that have uplink references in the DAS g. Verifying the existence in the EOC RTS load catalog of the RTS loads that have uplink references in the DAS	

F-CMS-01630	5350	B	In support of a late change, the EOC shall process all loads associated with the change in less than 1 hour after receiving the updated DAS. The processing of loads associated with the change shall include: a. Generating an ATC load or ATC partial load based on the expanded DAS activities b. Verifying the current contents of RTS buffers referenced by the ATC load c. Generating a ground script based on the expanded DAS activities d. Verifying the existence in the EOC table load catalog of the table loads that have uplink references in the DAS e. Verifying the existence in the EOC flight software load catalog of the flight software loads that have uplink references in the DAS f. Verifying the existence in the EOC microprocessor load catalog of the microprocessor loads that have uplink references in the DAS g. Verifying the existence in the EOC RTS load catalog of the RTS loads that have uplink references in the DAS	
F-CMS-01775	1304	B	The EOC shall provide the capability to generate a table load content based on a dump image of a table.	The table must be defined in the PDB.

F-DMS-00180	4963	A	The constraint definitions shall contain the following information: a. spacecraft constraint definitions b. instrument constraint definitions c. operational mode transition definitions d. command timing and sequencing constraints	Telemetry, command, activity and constraint definitions are governed by the formats specified in the FOS PDB Data Format Control Document (DFCD). Command timing and sequencing constraints are performed at the subsystem/instrument level and at the command level.
F-DMS-00770	2115	A	The FOS shall provide the capability to retrieve archived telemetry by specifying the following: a. Spacecraft start time b. Spacecraft stop time c. Data source (Ground station) d. Data type (housekeeping, engineering) e. Spacecraft Identifier (if applicable)	
F-DMS-00910	2121	A	The EOC shall archive all event messages.	Duplicated events will not be archived (i.e. telemetry limit events from multiple workstations).
F-DMS-01010	4966	A	The EOC shall be capable of storing data files.	This requirement will be used for disk sizing.

F-DMS-01020	4967	A	The EOC shall be capable of retrieving data files.	The EOC will store and retrieve the following data files: a. Absolute time command loads b. Relative time sequence loads c. Spacecraft memory dumps d. Instrument memory dumps e. Flight software loads f. Microprocessor loads g. Ground scripts h. Memory images i. Spacecraft memory maps j. Load reports k. Integrated load report l. Schedules m. Procedures n. Display definitions o. Room definitions p. Report formats q. User configuration defaults r. Analysis request files s. Operator guides t. Operator procedures u. Spacecraft technical documentation v. Orbit statistics w. Daily statistics x. Monthly statistics y. EOS mission star catalog z. EOS Brouwer-Lyddane elements aa. Long term science plans bb. Long term instrument plans cc. Long term spacecraft operations plan dd. Orbit data ee. Instrument activity lists ff. Spacecraft subsystem activity lists gg. TDRSS Schedules hh. Oscillator frequency report ii. Onboard navigation evaluation report jj. Filter tuning parameters kk. Mass and center of Mass location estimates ll. NCC configuration codes mm. Planning Aids
F-DMS-01110	2127	B	The EOC shall provide the capability to send archived data to a designated SDPS.	
F-DMS-01120	2128	B	The EOC shall accept storage status, indicating the success or failure of the storage of the archived data, from the SDPS.	
F-DMS-01130	2129	B	The EOC shall maintain the archived data until the SDPS has notified the EOC of successful storage.	

F-DMS-01140	2130	B	The EOC shall provide the capability to retrieve FOS archive data from the SDPS.	
F-DMS-01230	2134	B	The FOS shall provide the capability to filter event messages by: a. UTC time tag b. Event type c. Event Identifier d. Spacecraft Identifier (if applicable) e. Instrument Identifier (if applicable)	
F-DMS-01250	2136	B	The FOS shall provide the capability to designate a type of event message as an alarm.	This requirement is for local events.
F-DMS-01270	4975	A	The FOS shall provide the capability to generate events upon receipt of hardware component status change information from the MSS.	
F-DMS-01280	4981	A	The FOS shall provide the capability to generate events upon receipt of permanent and temporary software component status change information from the MSS.	
F-FOS-00035	961	B	The EOC shall provide a test mode of operation that does not interfere with ongoing operations, and which supports independent FOS and subsystem tests, end-to-end tests, and integration and verification activities occurring during at a minimum: a. Spacecraft and instrument integration and test b. Pre-launch c. Upgrades and enhancements	

F-FOS-00045	963	B	The EOC shall participate in the scheduling of interface and end-to-end tests with the external elements involved, including the IP-ICCs, the spacecraft simulator(s), the SMC for other EOS elements, and EDOS for MO&DSD data delivery systems.	The scheduling requirement will be implemented through operations at the EOC.
F-FOS-00075	965	B	The EOC shall provide tests for validating, verifying, and checking functional capabilities and performance for EOC functions after the EOC has been repaired or upgraded.	
F-FOS-00085	967	A	The EOC shall support instrument integration activities associated with the spacecraft prior to launch.	
F-FOS-00095	969	B	The EOC shall support spacecraft and instrument tests at the integration site and at the launch site.	
F-FOS-00098	970	B	The EOC shall provide the capabilities: a. To test both nominal operations and failure paths b. To log test activities and test configuration c. To support analysis of test data and the generation of test results d. To maintain test procedures and test results	
F-FOS-00165	980	B	The EOC shall prepare a compliance report with the LTSP and LTIP.	The compliance report with the LTSP and the LTIP will be manually prepared by the Flight Operations Team (FOT).
F-FOS-00170	981	B	The EOC shall provide the SMC with access to EOC reports, including at a minimum the following: a. Plans and schedules b. Security actions c. Maintenance information	
F-FOS-00175	4952	A	The EOC shall administer the allocation of IST connections to the EOC.	Allocation of IST connections will be administered based on the policy as defined in the IST Capabilities Document for the ECS Project (194-00602TPW).

F-FOS-00240	4954	A	The EOC shall provide time resolution of 10 milliseconds for the internal EOC computer clocks.	The time source is driven by an external source --i.e., NASA-36 time.
F-FOS-00245	4955	B	The EOC shall provide time accuracy of 500 milliseconds.	The time accuracy pertains to the accuracy of the computer clocks in the EOC network with respect to one another and the time source.
F-FOS-00250	4956	A	The FOS shall provide that the time lag between the production of an event message and its display does not exceed 1.0 second.	This requirement is applicable during nominal operations -- i.e., it does not pertain to situations where a burst of limit violation messages are produced.
F-FOS-00255	4957	A	The FOS shall provide a time accuracy for time tagging of event messages within 1 second of their occurrence.	The test for this requirement will be by design inspection.
F-FUI-01170	1684	A	The FOS shall provide the capability to dynamically reposition windows in a room.	
F-FUI-01175	1685	A	The FOS shall provide the capability to dynamically resize windows in a room.	
F-FUI-01200	1688	B	The FOS shall provide the capability to specify the default printer.	
F-FUI-01215	1691	B	The FOS shall provide the capability to specify the default color intensities for the real-time windows.	
F-FUI-01220	1692	B	The FOS shall provide the capability to specify the default colors for non real-time windows.	The selection of colors will be from a predefined palette as defined in the ECS User Interface Style Guide.
F-FUI-01225	1693	B	The FOS shall provide the capability to select the default font styles to be used from a predefined selection.	
F-FUI-01235	1695	B	The FOS shall, upon user login, load the following default settings: a. default printer b. default data directories c. default screen snap d. default real-time color intensities e. default window colors f. default font styles g. default room selections	

F-FUI-01310	1697	A	The FOS shall provide a command line editing capability that allows the retrieval and display of the 20 most recent input lines for modification and resubmission.	
F-FUI-01315	4989	A	The FOS shall allow the user access to the following capabilities: a. user specified rooms b. a list of available rooms c. a list of available windows d. additional tools (i.e., environment setup) e. procedures	
F-FUI-01325	1700	A	The FOS shall enable the user to filter event messages according to the type of event.	
F-FUI-01330	1701	A	The FOS shall allow the user to initiate functions from a control window using a pointing device.	
F-FUI-01335	1702	A	The FOS shall allow the user to perform typical windowing desktop control with the pointing device, including: a. window focus selection b. window movement c. window resizing d. window closing e. window iconifying	The FOS intends on providing an "undo" capability where applicable.
F-FUI-01430	1709	B	The IST shall provide the capability for a PI/TL to delete IST users from the system.	
F-FUI-01435	1710	B	The EOC shall provide the capability for an EOC Manager to delete EOC users from the system.	CSMS
F-FUI-01538	4990	A	The FOS shall allow a procedure to reference telemetry parameters.	This includes spacecraft and ground telemetry.
F-FUI-01600	1733	A	The FOS shall provide the capability to specify the type of screen snap to perform, which includes: a. snap to a printer b. snap to a file	

F-FUI-01605	1734	A	The FOS shall provide the capability to snap a window.	
F-FUI-01610	1735	A	The FOS shall provide the capability to specify the color intensities for the real-time windows.	
F-FUI-01620	1737	A	The FOS shall provide the capability to select the font styles to be used from a predefined selection.	
F-FUI-02200	1742	B	The FOS shall allow the user to send files from a user station or server.	
F-FUI-02230	1749	B	The FOS shall provide a list of candidate destinations from which to select the destinations for the file transfer.	
F-FUI-02240	1751	B	The FOS shall provide a notification to the user that: a. a file transfer is in progress b. a file transfer has been completed c. a file transfer error has occurred	
F-FUI-02305	1754	B	The FOS shall provide the user the capability to select the replay rate.	
F-FUI-02450	1770	B	The FOS shall provide the capability to delete a document.	The capability to input, udpate, and delete a document will be procedurally limited to the FOT document manager.

F-FUI-02610	5341	B	The FOS shall provide a palette that shall include: a. label b. field c. (deleted) d. (deleted) e. (deleted) f. graph g. table h. deleted) i. (deleted) j. (deleted) k. data source l. (deleted) m. (deleted) n. horizontal separator o. vertical separator p. schematic graphic items (point, line, icon, circle, rectangle, ellipse, and polygon)	
F-FUI-02700	1791	B	The FOS shall allow the user to browse on-line help documentation.	
F-FUI-02725	1796	B	The FOS shall provide a help screen with the following navigational schemes: a. hypertext forward b. hypertext trace back c. page forward d. page backward e. jump to home page (table of contents) f. search/find on a keyword	Hypertext trace back provides the ability to bring up help pages that the user previously viewed.
F-FUI-02810	1799	A	The FOS shall provide a user the capability to save procedures according to one of the following procedure types: a. emergency b. command c. ground d. local e. activity f. user-defined categories	The following procedure types will be implemeneted for FOS: Emergency - a procedure that contains command directives that perform an emergency operation (e.g., safe an instrument). The policy for classifying a procedure as an emergency procedure will be determined by the FOT. Command - a non-emergency procedure that contains at least one command directive. Ground - a procedure that contains at least one ground system directive. Local - a procedure that contains no command or ground system directives. Activity - a procedure created as part of a Planning and Scheduling activity definition. User-defined - a category type defined by the user.
F-FUI-02850	1807	A	The FOS shall be capable of checking the syntax of a procedure.	

F-FUI-02860	1809	A	The FOS shall provide a user the capability to request validation of procedures.	Procedures will be validated by the Command Management Subsystem. Validation status, including all errors detected, will be returned to the FUI Subsystem and displayed to the user.
F-FUI-02880	1813	A	The FOS shall display a list of mnemonics descriptors that the user may select from to build procedure directives.	
F-FUI-02885	1814	A	The FOS shall display a list of mnemonic qualifiers that the user may select from to build procedure directives.	The qualifier list will correspond to the selected discrete mnemonic descriptor.
F-FUI-02890	1815	A	The FOS shall display a set of current limit values that the user may select from to build procedure directives.	The set of limit values will correspond to the selected analog mnemonic descriptor.
F-FUI-02895	1816	A	The FOS shall provide a user the capability to insert the following items into the procedure text: a. directive keywords b. directive keyword qualifiers c. mnemonics d. mnemonic qualifiers (for mnemonics with discrete values) e. limit identifiers (for mnemonics with analog values)	Four limit values will be displayed: high-red, high-yellow, low-yellow, and low-red. If the user selects one of these, a corresponding identifier (i.e., a symbolic constant such ad HIGH-RED) will be inserted into the procedure. This will allow the procedure to reference the proper limit value from the project data base when the procedure is executed.
F-FUI-02950	1819	B	The FOS shall provide the capability to save a report template.	
F-FUI-02962	1823	B	The FOS shall provide the capability to specify the report fonts.	
F-FUI-02963	1824	B	The FOS shall provide the capability to specify the report title.	
F-FUI-02964	1825	B	The FOS shall provide the capability to specify a default destination for the completed report (file, printer, browser/editor).	
F-FUI-02965	1826	B	The FOS shall provide the capability to specify report author name.	
F-FUI-02995	1834	A	The FOS shall provide the capability to save a completed report.	

F-FUI-03000	1835	A	The FOS shall provide the capability to initiate the printing of a completed report.	
F-FUI-03005	1836	A	The FOS shall provide the capability to initiate the report browser/editor with a completed report.	
F-FUI-03010	1837	A	The FOS shall provide the capability to cancel the processing of a report generation request.	
F-FUI-03050	1843	B	The FOS shall provide the capability to display an existing report.	
F-FUI-03055	1844	B	The FOS shall provide the capability to print an existing report.	
F-FUI-03060	1845	B	The FOS shall provide the capability to edit an existing report.	
F-FUI-03061	1846	B	The FOS shall provide the capability to save an existing report.	COTS products are being considered for the report browser/editor.
F-FUI-04000	1857	A	The FOS shall provide the capability to display a mission schedule for a specified time period on a timeline display.	
F-FUI-04050	1862	B	The FOS shall provide the capability to specify mission schedule access permissions on a timeline display.	
F-FUI-04120	1869	A	The FOS shall provide the capability to display activities and events on the timeline display.	
F-FUI-04140	1871	B	The FOS shall provide the capability to display detailed information about activities and events selected from the timeline display.	
F-FUI-05205	1883	A	The FOS shall provide an authorized user the capability to request the generation of an RTS load.	
F-FUI-05210	1884	A	The FOS shall display any validation errors detected in the RTS data.	

F-FUI-05215	1885	A	The FOS shall notify the requester when an RTS load has been successfully generated.	
F-FUI-05220	1886	A	The FOS shall display any errors encountered during the RTS load generation process.	
F-FUI-05510	1900	B	The FOS shall provide a user the capability to display RTS linkages.	Linkages indicate the relationship between RTS buffers. One RTSbuffer may contain commands invlking other RTS buffers.
F-FUI-05515	1901	B	The FOS shall provide a user the capability to display the command-to-memory map of an RTS buffer.	
F-FUI-06210	1914	B	The EOC shall notify the Ops Controller of pending command requests.	
F-FUI-06235	1919	B	The EOC shall provide the CAC the capability to merge the command request procedure with the current executing ground script directives.	
F-FUI-06240	1920	B	The EOC shall indicate to the CAC the syntax check status of the procedure referenced in the command request.	
F-FUI-06245	1921	B	The EOC shall indicate to the CAC the validation status of all procedures referenced in the command request.	The originator of a command request will be able to monitor the status of each procedure merged into the ground script via the Command Control Window (see the Command Control requirements that follow).
F-FUI-06300	5342	A	The FOS shall display the following information for the active ground script: a. ground script time frame (UTC start and stop time) b. ground script status (active or suspended) c. spacecraft Id d. (deleted) e. (deleted) f. command confirmation mode g. bias time	Command Confirmation Mode, when enabled, requires the CAC to issue a 'Send' directive for each command directive.
F-FUI-06345	1931	B	The EOC shall provide the CAC the capability to set (on/off) prerequisite state checking.	

F-FUI-06380	1938	B	The EOC shall provide the CAC the capability to apply a bias time to all future directives in the ground script.	
F-FUI-06385	1939	A	The EOC shall provide the CAC the capability to confirm a critical command directive.	
F-FUI-06390	1940	A	The EOC shall provide the CAC the capability to cancel a command directive.	
F-FUI-06410	1944	A	The EOC shall provide the CAC the capability to terminate the current ground script.	
F-FUI-06415	1945	A	The EOC shall provide the CAC the capability to start a ground script.	
F-FUI-06430	1948	B	The EOC shall provide the CAC the capability to merge procedures with the current executing ground script directives.	
F-FUI-06435	1949	B	The EOC shall provide the CAC the capability to merge a directive with the current executing ground script directives.	
F-FUI-06440	1950	A	The FOS shall provide a user the capability to search the executing ground script for a specified procedure reference.	
F-FUI-06445	1951	A	The FOS shall provide a user the capability to search the executing ground script for a specified command.	
F-FUI-06455	1953	A	The FOS shall provide a user the capability to search the executing ground script for a specified text string.	
F-FUI-07140	1960	B	The FOS shall provide the capability to specify the real-time display data source(s).	Each real-time display can be associated with real-time, replay, and/or simulation data streams. The user can specify the data source of a telemetry display to be from one or multiple data streams.

F-FUI-07230	5002	A	The FOS shall be capable of displaying a telemetry value in one of the following representations: a. formatted b. octal c. hex d. binary	A formated representation will either be a string, decimal integer, or floating-point number based upon the parameter type and the specified format.
F-FUI-07245	5003	A	The FOS shall allow the user to change the display of selected telemetry values to any of the following formats: a. converted b. decoded c. raw	The raw format displays the bit string extracted from the telemetry packet. The decoded format displays the integer representation of the raw value. The converted format displays the value of the parameter after its decoded value has been subjected to a parameter-specific conversion function (e.g., apply a calibration curve to the decode value).
F-FUI-07392	1996	A	The FOS shall allow the user to save a graph.	
F-FUI-07400	2000	A	The FOS shall provide tables that are capable of displaying the following: a. up to 50 discrete and analog real-time telemetry values over a specified time interval b. the associated time at each interval c. the descriptor or mnemonic of each telemetry value d. title e. current range of time displayed	
F-FUI-07410	2001	A	The FOS shall allow the real-time table display to have a maximum of 300 rows of data. Once the maximum has been reached, the oldest rows are removed as newer rows are added.	This will allow for 10 minutes work data at a 2 second update rate.
F-FUI-07415	2002	A	The FOS shall provide the user with the capability to specify whether the telemetry value is represented by its mnemonic or descriptor.	

F-FUI-07425	2003	A	The FOS shall provide the user with the capability to capture all occurrences of a telemetry value between screen updates, and then display the captured data at the next screen update.	
F-FUI-07500	2004	B	The FOS shall provide a display of two-dimensional schematic drawings.	
F-FUI-07510	2006	B	The FOS shall color code schematic components, changing colors according to the telemetry parameter limits.	
F-FUI-07515	2007	B	The FOS shall drive the color coded schematic components with telemetry values.	
F-FUI-07520	2008	B	The FOS shall provide the user the capability to save a snapshot of the schematic.	
F-FUI-07525	2009	B	The FOS shall provide the user the capability to print a snapshot of the schematic.	
F-FUI-07600	2010	A	The FOS shall display the following PDB information about discrete and analog telemetry parameters: a. the descriptor b. the mnemonic c. the valid states of a discrete telemetry value d. the conversion polynomial of an analog telemetry value e. the delta limits for a telemetry value f. the high and low, red and yellow limits for a telemetry value g. the cycles from which the telemetry value is extracted h. the telemetry values on which a derived telemetry value is based i. parameter Id j. spacecraft Id	

F-FUI-07605	2011	A	The FOS shall provide the user with the capability to display up to 50 telemetry parameters and their associated data in an Info window.	
F-FUI-08105	2016	B	The FOS shall provide a user the capability to display ground system equipment status.	
F-FUI-08110	2017	B	The FOS shall provide a user the capability to display ground system parameter values.	
F-FUI-09100	2019	A	The FOS shall provide the capability to build an off-line analysis request that contains the following: a. spacecraft Id b. spacecraft subsystems c. telemetry parameters d. time period e. sampling rates f. data filters g. frequency intervals h. output views i. output view formats j. pre-defined algorithms k. request name	Output view formats are defined in section 9.1.9.2.
F-FUI-09150	2029	A	The FOS shall provide the capability to delete a request from the request queue display.	
F-FUI-09160	2030	A	The FOS shall provide the capability to select output products for a completed request from the request queue display.	
F-FUI-09170	2031	A	The FOS shall provide the capability to display an analysis request.	
F-FUI-09180	2032	A	The FOS shall provide the capability to print an analysis request.	

F-FUI-09200	2033	B	The FOS shall provide the capability to display off-line analysis results in the following output views: a. graph (see 9.1.7.3 for graph requirements) b. table (see 9.1.7.4 for table requirements) c. analysis report (see section 9.1.2.9 for report requirements)	
F-FUI-09210	2035	A	The FOS shall provide the capability to print analysis results.	
F-FUI-09215	2036	B	The FOS shall provide the capability to save analysis output view formats.	
F-FUI-09220	2037	B	The FOS shall provide the capability to modify analysis output view formats. Format options include the following: a. engineering units b. raw values c. time	
F-FUI-09415	2051	A	The FOS shall provide the capability to build an analysis request on real-time data that contain the following: a. spacecraft Id b. spacecraft subsystem/instrument c. telemetry parameters d. real-time output views e. output view formats	
F-FUI-09510	2053	B	The FOS shall provide the capability to select a registered algorithm per selected parameters when building an analysis request.	
F-FUI-09515	2054	B	The FOS shall provide the capability to select valid discrete and analog values to be used per algorithm.	

F-FUI-09605	2056	A	The FOS shall provide a filter capability for the real-time event and event history displays that allows events to be included, excluded, or highlighted according to: a. spacecraft Id b. ground system c. instrument d. spacecraft subsystem e. event message type f. time period	Valid event message types are delineated in the archive requirement's section 9.2.2.
F-FUI-09620	2059	A	The graphical timeline event indicators shall be color coded per event type.	
F-FUI-09635	2062	A	The FOS shall allow the user to search for event messages that contain specific textual content.	
F-FUI-09640	2063	B	The FOS shall provide the results of an event history request in the event history display.	
F-FUI-09645	2064	A	The FOS shall visually alert a user that an event has occurred.	
F-FUI-09650	2065	A	The FOS shall allow the user to activate and deactivate the generation of auditory alarms associated with the occurrence of events.	
F-FUI-09700	2066	A	The FOS shall provide the user with the capability to request event history data.	
F-FUI-09705	5011	A	The event history request shall include filtering of events by: a. time period b. spacecraft Id c. instrument d. spacecraft subsystem e. event message type	
F-FUI-09710	2068	A	The FOS shall provide the user with the capability to store the results of the event history request for future analysis.	

F-FUI-17800	2281	B	The FOS shall provide a SSR analysis window that contains: a. buffer pointers b. buffer status c. playback state d. RF failures	
F-FUI-17810	2282	B	The FOS shall display recommended playback data loss recovery procedures.	
F-PAS-00100	1108	A	The FOS shall provide the capability for an authorized user to view any portion of the mission schedule.	
F-PAS-00105	1110	A	The FOS shall provide the capability for an authorized user to make updates to a mission schedule for a specific spacecraft.	
F-PAS-00110	1111	B	The FOS shall provide the capability for an authorized user to undo an update to a mission schedule for a specific spacecraft.	
F-PAS-00115	1112	A	The FOS shall provide the capability for an authorized user to create a mission schedule for a specific spacecraft.	
F-PAS-00135	1114	A	The FOS shall provide the capability for an authorized user to update portions of a mission schedule for a specific spacecraft.	
F-PAS-00310	1130	B	The FOS shall provide the capability for an authorized user to schedule an activity at user defined intervals starting at a specific date and time.	Planners will be able to select the following intervals: every n seconds (1 - 6000); or every n minutes (1 - 1440); or every n hours (1 - 960); or every n days (1 - 365); or every n weeks (1 - 52); or every n months (1 - 60); or every n years (1 - 10); or every orbit.
F-PAS-00335	1133	A	The FOS shall provide the capability for an authorized user to delete an activity from the mission schedule.	
F-PAS-00340	1134	B	The FOS shall provide the capability for an authorized user to search for and find an activity on the mission schedule by: its name; or its identifier; or the time.	

F-PAS-00420	1145	A	The FOS shall provide read-only access to non-modifiable parameters to be modified for an activity that is scheduled .	Parameters of this type will be able to be modified through the controlled process provided by the Data Management Subsystem.
F-PAS-00510	1150	B	The FOS shall provide the capability for an authorized user to schedule activities between a start and end time based on a Baseline Activity Profiles (BAP).	This will allow planners to use BAPs to schedule activities. Start and end times will be specified so that the BAP is not propagated out to infinity.
F-PAS-01200	1187	A	The FOS shall provide the capability for an authorized user to accept a user request specifying an uplink window for a load.	
F-PAS-01210	1189	A	The FOS shall verify a load is valid over the time period specified in the uplink request.	
F-PAS-01215	1190	A	The FOS shall use an uplink window request to schedule the uplink of a load.	
F-PAS-10305	2150	A	The EOC shall provide the AM-1 mission schedule to the ASTER ICC as specified in the ASTER ICC ICD.	
F-PAS-10315	2157	A	The FOS shall accept resource reservation activities from the ASTER ICC.	These 'place-holder' activities will allow ASTER to schedule activities without requiring specific pointing angles, dwell times, etc.
F-PAS-10445	2166	A	The EOC shall provide the capability to include AM-1 direct access system events on the AM-1 mission schedule.	Direct access operates in the following modes: direct broadcast is for the MODIS instruments; direct downlink is for the ASTER instrument; and direct playback is a contingency mode for science data download for all instruments.
F-PAS-10555	2178	B	The FOS shall provide the capability to model the following modes for the ASTER instrument based on activities received from the ASTER ICC: a. Observation Mode 1. Full (TBR) 2. VNIR (TBR) 3. VNIR Stereo (TBR) 4. TIR (TBR) 5. SWIR & TIR (TBR) b. VNIR Calibration Mode 1. Pre-Calibration (TBR) 2. Optical Calibration (TBR) 3. Dark Calibration (TBR) 4. Electric Calibration (TBR) c. SWIR Calibration Mode	

F-PAS-10605	2184	B	The FOS shall provide the capability to determine the number of CERES scans between sunrise and sunset events for a given satellite orbit.	The CERES instrument team will be able to use this predicted value as a command/activity parameter.
F-RMS-00030	1312	A	The EOC shall be capable of accepting EOC operator requests to configure the EOC.	Configure refers to the allocation of EOC hardware and software components for a specific use within a logical string.
F-RMS-00040	1314	A	The EOC shall allow EOC operators to identify EOC resources for operational mode.	Identifying a logical string for operation, test or training mode will not constrain the use of that logical string. This identification merely serves notice to all potential users of the intended use for a given string.
F-RMS-00050	1315	A	The EOC shall allow EOC operators to identify EOC resources for test mode.	Identifying a logical string for operation, test or training mode will not constrain the use of that logical string. This identification merely serves notice to all potential users of the intended use for a given string.
F-RMS-00060	1316	A	The EOC shall allow EOC operators to identify EOC resources for training mode.	Identifying a logical string for operation, test or training mode will not constrain the use of that logical string. This identification merely serves notice to all potential users of the intended use for a given string.
F-RMS-00090	1319	A	The EOC shall provide an EOC operator access to simulated data.	
F-RMS-00140	1324	B	The EOC shall provide an IST operator access to replay data.	
F-RMS-01060	1333	A	The EOC shall provide the capability to authorize an EOC operator to modify the ground system configuration.	
F-RMS-01070	1334	A	The EOC shall allow only one authorized EOC operator, at any given time, the privilege to modify the ground system configuration.	Ground configuration authority is granted on a per logical string basis.
F-RMS-03010	4972	B	The EOC shall monitor EOC hardware components for changes in status.	The status monitored tells the EOC that the component is active or inactive. The monitor function will be provided by MSS tools that will be employed by the FOS software. Statuses will be reported to the DMS subsystem in the form of management events.
F-RMS-03070	1343	B	The EOC shall notify the operator of changes in the ground configuration and component statuses.	
F-RMS-03080	1344	B	The EOC shall log changes in the ground configuration and component statuses.	
F-RMS-03240	1360	B	The EOC shall make performance monitoring and fault management information obtained from the MSS available to the EOC operator.	

F-RMS-04120	1368	B	The EOC shall provide the capability to exchange Communication Test and Acknowledgment messages to determine prepass operational readiness.	
F-TLM-00120	1371	A	The EOC shall be capable of receiving historical EOS spacecraft and instrument telemetry.	Historical telemetry data is nominally stored in the EOC short term archive for seven (7) days. Data older that seven (7) days can be retrieved from the GSFC DAAC.
F-TLM-00135	1372	A	The EOC shall be capable of receiving telemetry in either EDU or CCSDS packet format.	The EOC is required to directly accept and process archived instrument engineering telemetry in CCSDS packet form. Spacecraft and instrument housekeeping telemetry CCSDS packets will be received encapsulated within EDUs.
F-TLM-00810	1401	A	The FOS shall provide decommutation of a given location of a given packet to be associated with any one of various parameter mnemonics, depending on the value of a discrete telemetry context switch parameter.	The context switch may be either a telemetered or derived discrete parameter.
F-TLM-00815	1402	A	The FOS shall support up to sixteen (16) distinct, predefined ranges for each context switch parameter.	Data base validation will disallow any undefined context switch parameter states. The sixteen context switches will encompass all possible switch parameter values.
F-TLM-00820	1403	A	The FOS shall only decommutate a context-dependent parameter when the context switch is of good quality and has been marked active.	If a context switch is poor quality or has been marked static, the context-dependent parameter will be marked static.
F-TLM-00935	1447	A	The FOS shall be capable of performing EU conversions using seventh order or lower polynomials with a minimum of two coefficients.	Polynomial conversion will use the following equation: _y = C0 + C1x + C2x**2 + ... C7x**7 where x is the raw value, Ci is a data base defined coefficient, and y is the converted value.
F-TLM-00945	1448	A	The FOS shall be capable of performing EU conversions using linear interpolation with no more than 15 pairs of start and end-points that specify 15 contiguous line segments of increasing value.	Linear interpolation conversion will use the following equation: _y = mx + b where x is the raw value, m is the slope of the given segment, b is the y-axis intercept, and y is the converted value.
F-TLM-00960	1449	A	The FOS shall mark accordingly any telemetry parameter that results in an error during the EU conversion process.	For example, conversion errors could occur in the case of overlapping line segment end points. Such errors should be eliminated during telemetry data base validation.

F-TLM-00970	1450	A	The FOS shall provide the capability for the user to adjust the predefined EU conversion algorithm coefficient values.	Changing of the coefficient values via user directive is temporary. Permanent alterations may be accommodated through changes in the coefficient values resident within the Project Data Base. Whenever a new set of limits is loaded, the data base defined values will be restored.
F-TLM-01220	1439	A	The FOS shall allow adjustment of limit values only for those telemetry parameters that have predefined limit values.	
F-TLM-01225	1440	A	The FOS shall be able to modify boundary limit values, delta limit values, and limit sense intervals at the parameter level.	
F-TLM-01230	1441	A	The FOS shall provide the capability to specify limit adjustments in raw counts or engineering units.	
F-TLM-01235	1442	A	The FOS shall allow for adjusting the limit values of any boundary limit group for parameters having multiple boundary limit groups defined.	The telemetry data base values are restored when a new limit group is loaded or upon initialization.
F-TLM-01335	1409	B	The FOS shall mark a derived parameter as having questionable quality whenever any of the input parameters are marked as questionable.	
F-TLM-01350	1411	B	The FOS shall evaluate derived parameters in the specified order.	The order is based upon the specified re-evaluation (update) rates of the parameters and how the derived parameters were organized within the data base.
F-TLM-01355	1412	B	The FOS shall allow individual derived parameter evaluations to be enabled or disabled.	
F-TLM-01360	1413	B	The FOS shall provide the capability to adjust individual derived parameter re-evaluation rates based on a user specified interval.	Derived parameter processing will be invoked after the update interval for that parameter has been modified, and every Nth time interval thereafter, N being the interval in spacecraft clock seconds.
F-TLM-01365	1414	B	The FOS shall support a derived parameter evaluation interval of no less than one (1) spacecraft clock second.	The evaluation interval will be based on the spacecraft clock time extracted from the telemetry packets. This provides for the consistent evaluation of derived parameters whether they are geing processed at the real-time or some alternate replay rate.

F-TLM-01520	1458	B	The EOC shall be capable of receiving and storing spacecraft recorder playback housekeeping telemetry at rates up to 1.544 Mbps for each EOC controlled spacecraft.	Spacecraft recorder playback data is received rate-buffered from EDOS (via file transfer).
F-TLM-01525	1459	B	The EOC shall be capable of receiving and storing real-time instrument engineering telemetry at rates up to 50 Kbps for each EOC controlled spacecraft.	
F-TLM-01610	1464	B	The FOS shall replay telemetry data based upon a user specified time period.	
F-TLM-01625	1465	B	The FOS shall process all telemetry packets for the requested period, during the replay operation.	
F-TLM-01635	1467	B	The FOS shall be capable of processing stored housekeeping and engineering telemetry for display at rates up 150 Kbps.	This requirement permits the repid replay and display of stored telemetry, and may be useful during contact simulations.
F-TLM-01640	1468	B	The FOS shall be able to replay and process the telemetry data at the real-time or at a user specified rate.	
F-TLM-01825	1477	B	The EOC shall provide the capability to format and forward data to the FDF as the parameters are being extracted from telemetry.	
F-TLM-01830	1478	B	The EOC shall provide the capability to format and store data as the parameters are being extracted from telemetry.	
F-TLM-01835	1479	B	The EOC shall provide the capability of simultaneously storing the data while forwarding the data to the FDF.	
F-TLM-02125	1483	B	The EOC spacecraft state check shall reveal any deviations between the current state and expected state.	

F-TLM-02130	1484	B	The EOC shall report the differences between the expected and actual spacecraft states.	Any differences will be reported as notification messages.
F-TLM-02135	1485	B	The EOC shall provide the capability for the user to invoke spacecraft state checking.	
F-TLM-02140	1486	B	The EOC shall provide the capability to baseline the expected spacecraft state values with current downlink telemetry.	The table of expected spacecrft parameter values can be over-written with the current spacecraft telemetry values. If necessary, the user is then permitted to invoke the spacecraft check several times during a contact.
F-TLM-02235	4799	B	The EOS shall be capable of receiving and processing status information from the DSN.	DSN status information will be received in the form of monitor blocks.
F-TLM-02240	4800	B	The EOC shall be capable of receiving and processing status information, as available, from the GN.	
F-TLM-02245	4801	B	The EOC shall be capable of receiving and processing status information, as available, from the WOTS.	
F-TLM-02250	4802	B	The EOC shall be capable of storing non-telemetry messages as they are being received.	
F-TLM-10125	2216	A	The EOC shall be capable of receiving AM-1 housekeeping and AM-1 diagnostic telemetry data from both the I-channel and Q-channel simultaneously.	For example, the EOC will be able to accept telemetry with the I and Q channels in the following configurations: _2 - 16 kbps housekeeping _ or _1 - 16 kbps housekeeping and _1 - 16 kbps diagnostic
F-TLM-10130	2217	A	The EOC shall be capable of receiving the 1 kbps AM-1 health and safety telemetry data from both the TDRSS S-band and launch vehicle simultaneously.	This requirement assumes that AM-1 provides the capability of differentiating between the two health and safety streams.
F-TLM-10475	2231	A	The FOS shall be capable of extracting the 193 octet telemetry information from the 1 Kbps AM-1 standby CTIU packet application data field.	

F-TLM-10480	2232	A	The FOS shall be capable of extracting up to 7680 octets of telemetry information from the low-rate science packet application data field.	
F-TLM-10485	2233	A	The FOS shall be capable of extracting up to 1025 octets of telemetry information from the high-rate science packet application data field.	Requirements 10480 and 10485 permit the processing of AM-1 instrument engineering data.
F-TLM-10565	2241	A	The FOS shall be capable of continuously decommutating real-time instrument health and safety telemetry at a rate of 1 Kbps.	
F-TLM-10570	2242	A	The FOS shall be capable of decommutating real-time spacecraft diagnostic telemetry at a rate of 1 Kbps.	
F-TLM-10575	2243	A	The FOS shall be capable of decommutating real-time instrument diagnostic telemetry at a rate of 1 Kbps.	
F-TLM-10580	2244	A	The FOS shall be capable of decommutating real-time spacecraft standby CTIU telemetry at a rate of 1 Kbps.	